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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,479	01/15/2004	Tomio Mimura	247769US	4177

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EXAMINER

BUSHEY, CHARLES S

ART UNIT PAPER NUMBER

1724

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/757,479		MIMURA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Scott Bushey		1724	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2006 and 16 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                              |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                             | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6-16-06</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over either DE 3048303 A1 or Schultes, taken in view of Kessler.

DE 3048303 A1 (Fig. 3) and Schultes (Figs. 1 and 2) each alternatively disclose applicant's invention as recited by instant claim 6, except for the openings within the contact plate covering an area of 10 to 20% of the contact plate. Each of the alternative primary references do specifically disclose straight rows of irregularities formed by continuously smooth sinusoidal waves, wherein adjacent peaks and valleys of the

adjacent rows of the contact plates form openings which allow liquid from the front of one sheet to pass to the back of an adjacent sheet.

Kessler (Figs. 5 and 6; col. 1, lines 27-38; col. 3, lines 29-32) disclose a similar contact plate structure having sinusoidal waves, wherein apertures therein are specifically taught to cover applicant's claimed range of percentage of sheet area, thus insuring contact of all surfaces of the sheets with the liquid being acted upon. It would have been obvious for an artisan at the time of the invention, to optimize the percentage of open area of the apertures within the contact plates of either of the alternative primary references, in view of the teaching by Kessler, since such would insure optimal contact between the phases upon all available surface areas of the contact sheets.

#### ***Response to Arguments***

4. Applicant's arguments filed June 2, 2006 have been fully considered but they are not persuasive. Applicant's arguments directed to the prior art combination as applied against instant claim 6, the only pending claim in the case, are based upon the premise that Kessler cannot be considered to suggest that the open area of the contact plates of either of the alternative primary references lie within the claimed range of 10-20% of the area of the contact plate. As stated above, and in the previous Office action, Kessler teaches providing an open area within the range of 10-50% of the area of the contact plate. Kessler also discloses that the express purpose of his contact plate having the disclosed open area is to provide a plate of improved wettability over that of the prevailing prior art plates.

With respect to applicant's argument that the Kessler reference cannot be relied upon to suggest the use of applicant's narrow range of open area (10-20%), when the reference teaches a much broader range of 10-50%, such is not persuasive. The fact that the Kessler reference clearly teaches a range of open area (10-50%) that completely encompasses applicant's claimed range (10-20%) would at least lead one of ordinary skill in the art to optimize within the specific range as suggested by the reference by way of routine experimentation, thus arriving at a range that provides the best wettability of the plate. The wettability of a given plate, by the way, will depend upon several factors beyond the range of open area, including, but not limited to the viscosity of the liquid, the velocity and mass flow rate of the gas, the relative directions of the gas and liquid streams, the temperatures and pressures of the streams, the surface tension of the liquid stream, and the surface roughness of the plate between the openings and waves.

With respect to applicant's alleged evidence of criticality of the claimed range of open area as set forth by the declaration filed under 37 CFR 1.132 on September 28, 2004, such is not persuasive, since, among other reasons, it is directed to a comparison with prior art that is not relied upon by the Examiner, rather than the closest prior art as applied above. Furthermore, the declaration refers to several figures (6-8) within its body that are not of record in the application.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Bushey  
Primary Examiner  
Art Unit 1724

  
7-19-06

csb  
7-19-06